

SUPPORT FOR THE AMENDMENTS

The present amendment adds new claim 21.

Support for newly added claims 21 is found at specification page 3, lines 30-31, as well as original claim 5.

It is believed that this amendment has not resulted in the introduction of new matter.

REMARKS

Claims 1-7 and 9-21 are currently pending in the present application. New claim 21 has been added, by the present amendment.

Applicants wish to extend their appreciation to Examiner Walters for the helpful and courteous discussion held on June 3, 2009, with their undersigned Representative and Dr. Anders von Homeyer of BASF SE. During the meeting, the prior art rejection was discussed, along with potential amendments and/or arguments for overcoming the rejection. The content of this discussion is believed to be reflected in the remarks set forth herein.

The rejection of claims 1-7 and 9-20 under 35 U.S.C. § 103(a) as being obvious over Momma (U.S. Patent 5,798,173) in view of Dyllick-Brenzinger (U.S. 6,132,558) and Smigo (U.S. Patent 5,281,307) is respectfully traversed, with respect to claims 1-7 and 9-21.

Claim 1 recites a process for improving the printability of paper and paper products by enhancing the water resistance of ink-jet printed images, wherein the process comprises treating the paper or the paper products with an aqueous solution comprising a cationic polymer, wherein the cationic polymer comprises *positive charge providing units consisting essentially of vinylamine units*, has a charge density of at least 3 meq/g and is used as the *sole treatment composition* in the aqueous solution, wherein the composition is applied in an amount of from 0.05 g/m² to 5 g/m² to the surface of the paper or the surface of the paper product.

Claim 1 recites the transitional phrase “consisting essentially of” thereby limiting the scope of the cationic polymer to the materials specified therein and to those materials that do not materially effect the basic and novel characteristics thereof. See e.g., MPEP § 2111.03.

Unlike the claimed invention, Momma describes a process for improving the water resistance and light resistance of ink jet recording paper with a polyvinylamine copolymer obtained from copolymerizing N-vinylformamide and acrylonitrile (See e.g., abstract, column 2, lines 43-48, column 3, lines 45-54, and Preparation Examples 1-4 and Examples 1-22).

Applicants submit that acrylonitrile has a partial positive charge on the carbon that is present within the polar nitrile group. Therefore, acrylonitrile constitutes a positive charge providing unit.

Applicants also submit that the presence of acrylonitrile as described in Momma would materially effect the basic and novel characteristics of the claimed process for improving the printability of paper and paper products with the cationic polymer of the present invention by negatively effecting various properties thereof, including, for example, the quality of the printed image.

It is well understood by skilled artisans that the presence of acrylonitrile within the polyvinylamine copolymer deleteriously effects the properties thereof by decreasing light resistance, as evidenced by the dicyanamide of Comparative Example 4 of Momma, which contains two nitrile groups thereby negatively effecting the quality of the printed image by undesirably reducing the light resistance thereof (See e.g., Table 1, Comparative Example 4).

Therefore, the presently claimed process and cationic polymer recited therein exclude the presence of the acrylonitrile described in Momma because the presence of acrylonitrile would materially effect the basic and novel characteristics of the claimed invention. As a result, the process and cationic polymer of the present invention is fundamentally different from the process and polyvinylamine copolymer of Momma.

New claim 21 recites that the cationic polymer is a hydrolyzed *homopolymer* of N-vinylformamide.

Unlike the claimed invention, Momma describes a process for improving the water resistance and light resistance of ink jet recording paper with a polyvinylamine copolymer obtained from copolymerizing N-vinylformamide and acrylonitrile. Moreover, Momma teaches away from utilizing a hydrolyzed homopolymer of N-vinylformamide, since Momma discloses that a vinylamine polymer not having an acrylonitrile monomer unit is unable to impart sufficient water resistance and light resistance to ink jet recording paper (See e.g., column 3, lines 22-25).

Accordingly, a skilled artisan would *neither have been motivated, nor had a reasonable expectation of success*, to utilize a hydrolyzed homopolymer of N-vinylformamide as the claimed cationic polymer of new claim 21, based on the disclosure of Momma, *absent impermissible hindsight reconstruction*, because Momma teaches that a vinylamine polymer not having an acrylonitrile monomer unit is unable to impart sufficient water resistance and light resistance to ink jet recording paper, *thereby precluding a prima facie case of obviousness*.

Dyllick-Brenzinger and Smigo fail to compensate for the above-mentioned deficiencies of Momma.

As a result, Momma, Dyllick-Brenzinger and Smigo, when considered alone or in combination, fail to render obvious the claimed process for improving the printability of paper and paper products with the cationic polymer of the present invention.

Withdrawal of this ground of rejection is respectfully requested.

In conclusion, Applicants submit that the present application is now in condition for allowance and notification to this effect is earnestly solicited.

Respectfully submitted,

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